

Characteristics between pulsating aurora, energetic electron precipitation and chorus emissions observed at Syowa Station: A case study on 17 May 2007

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Pulsating aurora consists of modulated energetic electrons from a few to several tens of keV with pulses of a few seconds to a few tens of seconds [e.g., *Nishiyama et al.*, 2011, *JGR*]. Previous studies of pulsating auroral luminosity show a clear correlation with chorus emissions [e.g., *Nishimura et al.*, 2010, *Science*]. However, a detailed correlation study between auroral luminosity, energetic electron precipitation, and chorus emissions has not been performed. We focus on the pulsating auroral events on 17 May 2007 to examine characteristics of auroral luminosity by all-sky TV, energetic electron precipitation, and chorus emissions observed at Syowa Station in Antarctica. We use the Cosmic Noise Absorption (CNA) data from the imaging riometer which is sensitive to electron precipitation at several tens of keV. Pulsating aurora is detected around 02:59 UT on 17 May 2007. An enhancement of distribution of energetic electron precipitation is also detected at this time. This enhancement shows a correlation with an enhancement of chorus emissions. We show characteristics between auroral luminosity, energetic precipitation with several tens of keV, and chorus emissions and conduct a correlation analysis.